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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,222	10/16/2003	Susann Marie Keohane	AUS920030736US1	9463
35525	7590	04/13/2006	EXAMINER	
IBM CORP (YA)			DAYE, CHELCIE L	
C/O YEE & ASSOCIATES PC				
P.O. BOX 802333			ART UNIT	
DALLAS, TX 75380			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/688,222	Applicant(s) KEOHANE ET AL.	
	Examiner Chelcie Daye	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/16/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is issued in response to Application filed October 16, 2003.
2. Claims 1-14 are pending.

Information Disclosure Statement

3. The information disclosure statement filed October 16, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

4. Figures 1A, 2b, and 3b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 12 is objected to because of the following informalities: Missing the letter 'o' for the word "of", in the sixth line of the claim language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claim1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim1 recites the limitation "the characteristics" in the first line of the claim, examiner is unsure as to what "characteristics" applicant is referring to, since there is no prior mention. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1-5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norwood (US Patent No. 5,983,316) filed on May 29, 1997, in**

view of Maurer (US Patent Application No. 20030065780) filed on September 27, 2002.

Regarding Claims 1,8, and 12, Norwood discloses a method of converting the characteristics under which a logical volume is stored on a first physical volume group, said method comprising the steps of:

a first processor connected as a server (column 6, lines 57-61, Norwood);

a plurality of client processors connected to said first processor (column 7, lines 27-34, Norwood);

a logical volume stored on a first physical volume group and connected to be accessed from said first processor and said plurality of client processors (column 4 , lines 2-9, Norwood), said first physical volume having a first set of fixed characteristics (column 4, lines 22-25, Norwood); and

allocating a second physical volume group (column 4, lines 5-11, Norwood)¹ having the desired characteristics for storing said logical volume (column 4, lines 19-24, Norwood). However, Norwood is silent with respect to setting up said second physical volume group as a temporary mirror of said first physical volume group, wherein: reads of said logical volume from an application are directed solely to said first physical volume group and write to said logical volume from an application are directed to both said first physical volume group and said second physical volume group; and synchronizing said logical volume

¹ Examiner Notes: The step of allocating is represented in Fig.1, item 75, wherein item 74 is the first physical volume group and 75 is the second physical volume group, and there division represents the groups being allocated. To further elaborate columns 4-5, lines 66-67 and 1-2, Norwood; show the logical volume is allocate and the physical volume is "divided" (i.e. allocation).

from said first physical volume group to said second physical volume group. On the other hand, Maurer discloses setting up said second physical volume group as a temporary mirror of said first physical volume group ([0138], lines 4-11, Maurer), wherein: reads of said logical volume from an application are directed solely to said first physical volume group ([0112], lines 1-6, Maurer)² and write to said logical volume from an application are directed to both said first physical volume group and said second physical volume group ([0015], lines 1-13, Maurer); and synchronizing said logical volume from said first physical volume group to said second physical volume group ([0055], lines 1-8, Maurer). Norwood and Maurer are analogous art because they are from the same field of endeavor of monitoring status changes of disk storage devices. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Maurer's teachings into the Norwood system. A skilled artisan would have been motivated to combine as suggested by Maurer at paragraph [0010], lines 1-13, in order to enable extraction of logical information in a non-complex and fast manner, so that a surrogate computer could work with replicated copies in substantially the same manner as the original source computer that operated with the standard data.

Regarding Claims 2,9, and 13, the combination of Norwood in view of Maurer, disclose the method comprising, during said synchronizing step, blocking

² Examiner Notes: "Copy" corresponds to reads.

access by an application to a portion of said logical volume whenever said portion is being synchronized ([0112], lines 7-17, Maurer).

Regarding Claims 3, 10, and 14, the combination of Norwood in view of Maurer, disclose the method further comprising, after completion of said synchronizing step ([0112], lines 14-17, Maurer), dropping said temporary mirroring ([0138], lines 6-8, Maurer) and indicating said second physical volume group to be the location of said logical volume ([0116], lines 1-13, Maurer).

Regarding Claim 4, the combination of Norwood in view of Maurer, disclose the method wherein at least one of said first physical volume group and said second physical volume group comprise a plurality of physical volumes (column 4, lines 5-11, Norwood).

Regarding Claims 5 and 11, the combination of Norwood in view of Maurer, disclose the method wherein at least one of said first physical volume group and said second physical volume group is striped ([0122], lines 1-11, Maurer).

Regarding Claim 7, the combination of Norwood in view of Maurer, disclose the method wherein both said first physical volume group and said second physical volume group are striped ([0122], lines 1-11, Maurer) and a

stripe characteristic is changed during said conversion ([0138], lines 8-13, Maurer).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Norwood (US Patent No. 5,983,316) filed on May 29, 1997, in view of Maurer (US Patent Application No. 20030065780) filed on September 27, 2002, as applied to claims 1-5 and 7-14 above, and further in view of Ripberger (US Patent No. 5,502,811) filed on September 29, 1993.

Regarding Claim 6, the combination of Norwood in view of Maurer, is silent with respect to disclosing the method wherein at least one of said physical volume groups are not striped. However, Ripberger discloses at least one of said physical volume groups are not striped (column 7, lines 32-49, Ripberger)³. Norwood in view of Maurer and further in view of Ripberger are analogous art because they are from the same field of endeavor of managing data on removable media volumes to support array operation. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Ripberger's teachings into the Norwood in view of Maurer system. A skilled artisan would have been motivated to combine in order to store all data of one object on one media unit until the free space of the media unit is consumed.

³ Examiner Notes: "Unstriping" means to take away the stripes, which corresponds to the volume not being striped.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chelcie Daye
Patent Examiner
Technology Center 2100
April 7, 2006



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